

WHAT IS CLAIMED IS:

1. An exhaust gas recirculation control device in a diesel engine provided with an exhaust gas recirculation path communicating a suction air path with an exhaust gas path, the device comprising:

a first temperature sensor provided at a portion more on the upstream side than a portion where said suction air path joins the exhaust gas recirculation path;

a second temperature sensor provided at a portion more on the downstream side than a portion where said suction air path joins the exhaust gas recirculation path;

an engine load detection sensor;

an engine speed detection sensor;

memory means storing, in advance, a temperature of a suction air before being mixed with an exhaust gas, and a temperature value at said second temperature sensor installation position corresponding to an appropriate exhaust gas recirculation amount which is uniquely defined by an engine load and an engine speed; and

judging means comparing the temperature value stored in said memory means corresponding to the detected values detected from said engine load detection sensor, the engine speed detection sensor and the first temperature sensor, with the detection value detected by said second temperature sensor, determining that the recirculation exhaust gas amount is appropriate in the case that said detection value is within a predetermined range relative to said temperature value, and determining that the recirculation exhaust gas

amount is abnormal in the case that said detection value is not within the predetermined range relative to said temperature value.

2. An exhaust gas recirculation control device in a diesel engine according to Claim 1, wherein

a throttle valve capable of regulating a flow rate of the exhaust gas passing through said exhaust gas recirculation path is provided in the exhaust gas recirculation path,

a control means for controlling an opening degree of said throttle valve is provided, and

an opening degree of the throttle valve is controlled by said control means, whereby the temperature value at the portion more on the downstream side than the portion where the suction air path communicates with said exhaust gas recirculation path corresponding to the temperature value at the portion more on the upstream side than the portion where the suction air path communicates with said exhaust gas recirculation path is within a previously set predetermined range.

3. An exhaust gas recirculation control device in a diesel engine according to one of Claims 1 and 2, wherein

a response delay of the detection value by said second temperature sensor is compensated by averaging the temperature value stored in said memory means corresponding to the detection values detected from said engine load detection sensor in a temporal manner, the engine speed detection sensor and the first temperature sensor.

4. An exhaust gas recirculation control device in a diesel engine according to one of Claims 1 and 2, wherein

in the diesel engine in which an operation of rapidly changing an engine load or an engine speed is executed, said judging means executes a judgment of the amount of the recirculation exhaust gas only at a time when the engine load and the engine speed are stabilized.

5. An exhaust gas recirculation control device in a diesel engine according to one of Claims 1 and 2, wherein

a cooling water temperature sensor detecting a temperature of a cooling water is provided, a detecting means detecting that a warm-up is finished on the basis of a fact that the temperature of the cooling water detected by said cooling water temperature sensor detects reaches a predetermined temperature is provided, and

the judgment of the amount of the recirculation exhaust gas is executed by said judging means at either a time after the warm-up is finished and before an actual operation is started, or a time after the actual operation is finished and the engine stops.

6. An exhaust gas recirculation control device in a diesel engine according to Claim 1, wherein

when the judging means determines that the amount of the recirculation exhaust gas is abnormal in the case that the detection value does not exist within the predetermined range, by comparing the temperature value stored

in said memory means corresponding to the detection value detected from said engine load detection sensor, the engine speed detection sensor and the first temperature sensor with the detection value detected by said second temperature sensor, a margin in said predetermined range is set smaller in a side in which the detection value of the second temperature sensor is higher than in a side in which the detection value is lower.

7. An exhaust gas recirculation control device in a diesel engine according to one of Claims 1 to 3, wherein

a compensating means for compensating the temperature value stored in said memory means by the temperature value detected by said cooling water temperature sensor at a time of a cooling condition is provided.